

ANALOG SIGNAL SEPARATOR FOR UWB VERSUS NARROWBAND SIGNALS

ABSTRACT OF THE DISCLOSURE

5 A system, method, and computer program product for removing "narrowband" interference
from a broader spectrum containing a UWB signal, in a receiver of the UWB signal. The
RFI is extracted from a broader spectrum to remove interference from the UWB signal, by
employing an impulse response in a radio front-end of the UWB receiver that is matched with
an incoming wavelet employed as part of a UWB signal to be received, matching the impulse
10 response to the wavelet and its time-shifted and inverted versions, passing the wavelet
unscathed through the receiver, and excising narrowband signals (continuous tones).
Exemplary embodiments for the RFI extraction mechanism include a transmission line
circuit, an active transmission line circuit, and an adaptable, controllable phase delay circuit.

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